

Heinrich

Radio has always been a science of rapid mental laws of the propagation and properties discovered within a period of only some four or Heinrich Hertz. These special photographs most famous and

always spoke of "Hertzian-wave" telegraphy, and felt that in so doing we were but giving bare acknowledgment to a man to whom we owe our knowledge of the fundamental principles which make radio possible.

On these pages we are reproducing some photographs bearing upon the life and achievements of Hertz, some of them actually contemporary, and some, we believe, hitherto unpublished. In conjunction with them some biographical notes may be of interest.

Born in 1857 in Hamburg, Hertz early showed a bent for physics, and in his student days he worked under the great Helmholtz in Berlin. The influence of that inspiring teacher and discoverer confirmed him in his early inclination towards the natural sciences and, indeed, decided the course of his life's studies.

In 1883 he went to Kiel, and began the study of Clerk Maxwell's theory of the electro-magnetic



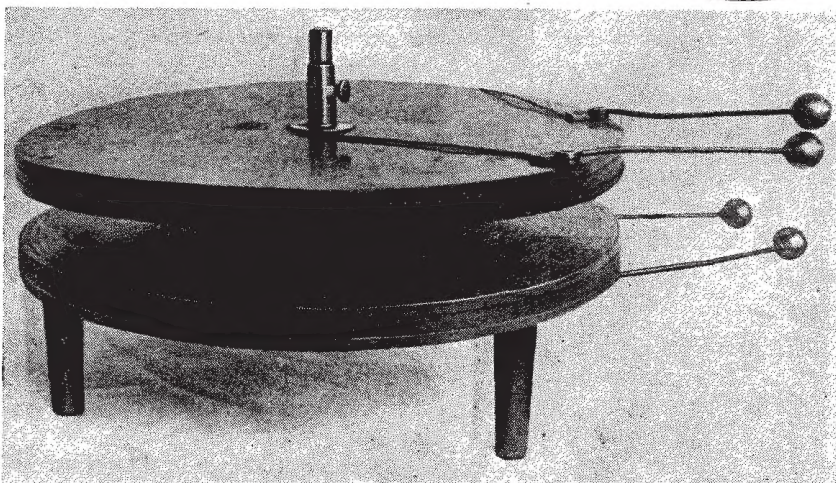
Hertz' birthplace: his parents' house in Hamburg

IN these days of radio as an exact science, with research work done in laboratories equipped with all kinds of precision measuring apparatus, it is sometimes salutary to reflect upon the work done by the great pioneers—men who achieved their epoch-making discoveries under very different conditions.

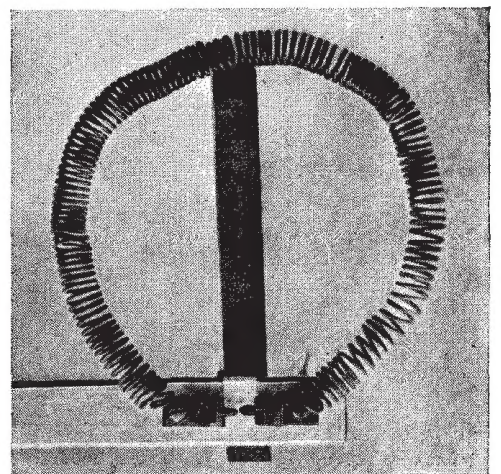
Of them all, perhaps Heinrich Hertz was the greatest explorer of the unknown. So basic were his discoveries that for many years we



A portrait of Hertz taken in 1877



Much of Hertz' work on the properties of high-frequency currents concerned their inductive actions, for which investigations he used such simple pieces of apparatus as the device illustrated here



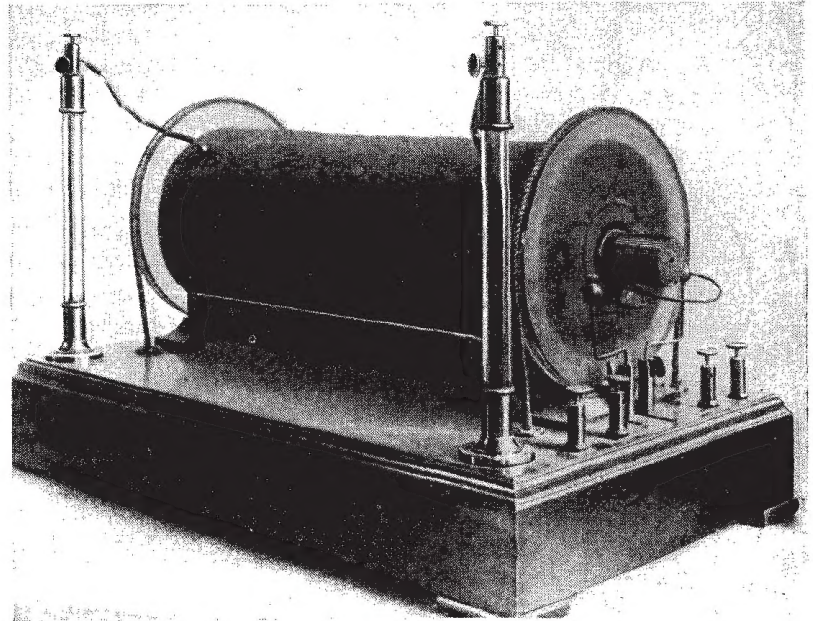
A simple type of "resonator" employed by Hertz for detecting electro-magnetic radiations

Hertz

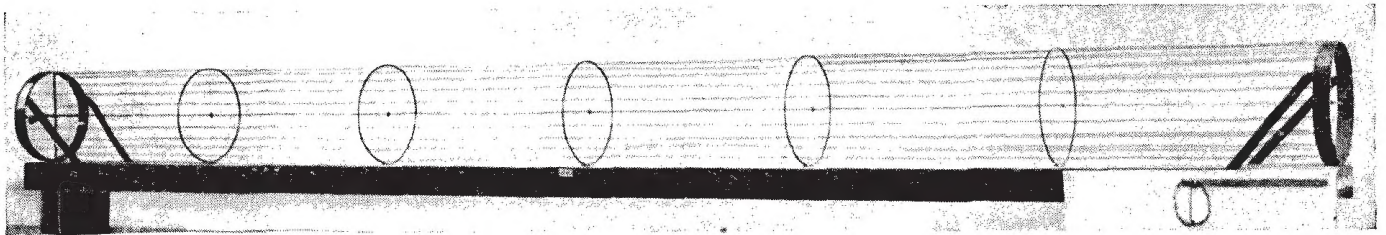
progress and it is characteristic that the fundaments of electro-magnetic waves should have been discovered five years before that great investigator, show, among other things, some of Hertz's early apparatus

nature of light which led to his great discoveries in the realm of etheric radiation. Those discoveries were mostly made between the years 1885 and 1889 when Hertz was a Professor.

It seems that Helmholtz had early realised the calibre of his brilliant pupil, for quite soon after Hertz had begun his researches Helmholtz drew his attention to the fact that a prize was being offered by



The original induction coil employed by Hertz as a source of high voltages for much of his work



This system of spaced wires was used in Hertz' experiments on the "skin effect" which characterises the flow of high-frequency currents



A reproduction from a contemporary photograph of Hertz in his schooldays, December 1865. An interesting contrast with usual portraits showing him as a bearded professor!

the Berlin Academy of Science for an experimental demonstration of the relation between electro-magnetic actions and the polarisation of a dielectric.

At that time Hertz' investigations had not progressed sufficiently far to enable him to see how the required experiment could be arranged, but soon there came his fundamental discoveries of such things as the radiation of electro-magnetic disturbances in space.

Once having established the general nature of these radiations he proceeded to measure their wavelengths and frequencies, and thereby discovered some of the fundamental relations which we now accept as the alphabet of the science.

Some of his most vitally important discoveries came when he proceeded to investigate the properties of the electro-magnetic radiations. Experiments showed him that they were capable of being reflected and refracted, and these facts, and others which he deduced theoretically regarding the mode of vibration of etheric disturbances, indicated a similarity with the corresponding characteristics of heat and light waves.

To complete our biographical notes; in 1889 Hertz was appointed Professor of Physics at the University of Bonn, and there continued his researches, making study of electrical discharges in rarified gases.

Great as were the achievements of Hertz, he was still a young man when he died in 1894 at Bonn.